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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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William Lo

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EXAMINER

BLAIR, DOUGLAS B

ART UNIT

PAPER NUMBER

2142

MAIL DATE

DELIVERY MODE

06/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/991,043	Applicant(s) LO, WILLIAM	
	Examiner Douglas B. Blair	Art Unit 2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-182 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-182 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Claims 1-182 are currently pending in this application.

Response to Arguments

2. Applicant's arguments filed 3/13/2007 have been fully considered but they are not persuasive. The applicant argues that during a personal interview the Examiner acknowledged that Agazzi does not anticipate the Applicant's claim 1. Specifically, the applicant contends that the Examiner agreed that Agazzi fails to disclose the limitation of an autonegotiation controller that determines a first number of pairs of twisted pair wires of said cable that are operable.

3. The assertion that the Examiner agreed that Agazzi does not anticipate the claims is not correct. The Examiner stated that **IF** Agazzi does not disclose an autonegotiation controller that determines a first number of pairs of twisted pair wires of said cable that are operable, then the Examiner would agree that Agazzi does not anticipate the claimed invention. During the interview on February 15th 2007, Mr. Purcell brought up this argument about the Agazzi not teaching "an autonegotiation controller that determines a first number of pairs of twisted pair wires of said cable that are operable" for the first time. The Examiner made it clear Mr. Purcell that no definitive answer could be given to this argument during the interview because the Agazzi patent is 35 pages long and the Examiner had not been asked to review it for any specific matters in advance. The Interview Summary mailed on 2/15/2007 makes it clear that no agreement was reached. Specifically, it states that, "The Examiner agreed that, **if** Agazzi does not explicitly teach the autonegotiation controller making the determination that a number of

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pairs are operable, then Agazzi does not anticipate claim 1.” Mr. Purcell was given a copy of the Interview Summary on the spot and did not dispute the account so it is unclear why the applicant now believes that an agreement was reached about Agazzi not anticipating the claims.

4. After a careful review of Agazzi, the Examiner believes that Agazzi does anticipate the claimed invention. As discussed during the interview, the applicant never defines the autonegotiation controller in the applicant’s specification (See paragraph 28) nor does the applicant provide any evidence of how the autonegotiation controller is to be interpreted. Therefore the term autonegotiation controller can only be interpreted broadly. Thus Agazzi does teach “an autonegotiation controller that determines a first number of pairs of twisted pair wires of said cable that are operable” when interpreting the PHY Control module as the claimed autonegotiation controller. This interpretation is reasonable given that the PHY Control module features the autonegotiation module (col. 15, lines 24-38 and Figure 13) and the PHY Control module performs the claimed diagnostics (col. 17, lines 17-33, col. 19, lines 25-39, and col. 20, lines 12-28).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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6. Claims 1-2, 7-8, 11-24, 34-59, 64-65, 68-84, 89-109, 114-115, 132-133, 138-139, and 142-155 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Number 6,898,185 to Agazzi et al..

7. As to claim 1, Agazzi teaches a physical layer of a first device that is connected to cable of an Ethernet network, comprising: a digital signal processor (DSP) coupled to said cable that receives and decodes first signals on said cable and that codes and transmits second signals on said cable (col. 9, line 33-col. 10, line 35), and an autonegotiation controller that communicates with said DSP and that includes a cable detector that determines a first number of pairs of twisted pair wires of said cable that are operable (col. 19, lines 25-39 and col. 20, lines 12-28).

8. As to claim 2, Agazzi teaches a physical layer that includes one of two pairs of twisted pair wires and four pairs of twisted pair wires (col. 9, line 33-col. 10, line 35).

9. As to claim 7, Agazzi teaches the physical layer of claim 1 wherein a pair of twisted pair wires are inoperable if signals are not received on said pair (col. 19, lines 25-39 and col. 20, lines 12-28).

10. As to claim 8, Agazzi teaches the physical layer of claim 1 wherein a pair of twisted pair wires are inoperable if signals received by said pair cannot be decoded correctly by said DSP (col. 19, lines 25-39 and col. 20, lines 12-28).

11. As to claim 11, Agazzi teaches the physical layer of claim 1 wherein said cable detector includes a maxwait timer and has a first state (col. 4, lines 25-41).

12. As to claim 12, Agazzi teaches the physical layer of claim 11 wherein said cable detector transitions from said first state to a second state when said DSP receives signals on at least one of a first pair and a second pair of twisted pair wires (Figure 2).

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13. As to claim 13, Agazzi teaches the physical layer of claim 12 wherein said cable detector transitions from said second state to a third state when said DSP receives and decodes signals on said first and second pairs of twisted pair wires (Figures 17-19).

14. As to claim 14, Agazzi teaches the physical layer of claim 13 wherein said cable detector transitions from said second state to a fourth state when said DSP receives signals on at least one of said first and second pairs but not third and fourth pairs and said maxwait timer times out (Figures 17-19).

15. As to claim 15, Agazzi teaches the physical layer of claim 14 wherein said cable detector transitions from said third state to said fourth state when said DSP receives and decodes signals on said first and second pairs but does not receive signals on third and fourth pairs and said maxwait timer times out (Figures 17-19)

16. As to claim 16, Agazzi teaches the physical layer of claim 15 wherein said cable detector includes a slave counter that is incremented each time said cable detector transitions to said fourth state (col. 6, lines 13-35).

17. As to claim 17, Agazzi teaches the physical layer of claim 16 wherein said cable detector returns first state when said slave counter is less than limit and said cable to said detector sets said first number equal to two when said slave counter equals limit (col. 5, lines 24-50)

18. As to claim 18, Agazzi teaches the physical layer of claim 17 wherein said cable detector transitions from said first state to a fifth state when said maxwait timer times out and said DSP fails to detect signals on said first pair and said second pair (Figures 17-19).

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19. As to claim 19, Agazzi teaches the physical layer of claim 18 wherein said cable detector includes a master counter that is incremented each time that said cable detector transitions to said fifth state (col. 6, lines 13-35)

20. As to claim 20, Agazzi teaches the physical layer of claim 19 wherein said cable detector returns to said first state when said master counter is less than mlimit and said cable detector sets said first number equal to two when said master counter equals rmlimit (col. 6, lines 13-35).

21. As to claim 21, Agazzi teaches the physical layer of claim 20 wherein said cable detector sets said first number equal to four when said DSP receives and decodes signals on first, second, third and fourth pairs (col. 6, lines 13-35).

22. As to claim 22, Agazzi the physical layer of claim 21 wherein said cable detector transitions from said second state to a sixth state when said maxwait timer times out, said DSP does not receive and decode signals on said first and second pairs of twisted pair wires, and said DSP does not receive signals on at least one of said first and second pairs but not said third and fourth pairs (col. 6, lines 13-35).

23. As to claim 23, Agazzi teaches the physical layer of claim 22 wherein said cable detector transitions from said third state to a sixth state when said maxwait timer times out and said DSP does not receive and decode signals on first, second, third and fourth pairs (col. 19, lines 25-39 and col. 20, lines 12-28).

24. As to claim 24, Agazzi teaches the physical layer of claim 23 further comprising a status indicator that notifies said first network device when said requested speed is being masked (col. 19, lines 25-39 and col. 20, lines 12-28).

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25. As to claims 34-59, 64-65, 68-84, 89-109, 114-115, 132-133, 138-139, and 142-155, they feature limitations found in claims 1-2, 7-8, and 11-24 and are rejected for the same reasons as claims 1-2, 7-8, and 11-24.

Claim Rejections - 35 USC § 103

26. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

27. Claims 3-6, 9-10, 25-33, 60-63, 66-67, 85-88, 110-113, 116-131, 134-137, 140-141, and 156-182 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,898,185 to Agazzi et al. in view of U.S. Patent Application Number 6,377,640 to Trans.

28. As to claim 25, Agazzi teaches a physical layer of a first device that is connected to cable of an Ethernet network, comprising: cable including at least two pairs of twisted pair wires (col. 9, line 33-col. 10, line 35); a DSP coupled to said cable that receives and decodes first signals on said cable and that codes and transmits second signals on said cable (col. 19, lines 25-39 and col. 20, lines 12-28); and an autonegotiation controller that communicates with said DSP and that includes a cable detector that determines a first number of pairs of twisted pair wires of said cable that are operable when said cable detector determines that said first number is less than a number of twisted pair wires that are required to support a requested speed of said first device (col. 19, lines 25-39 and col. 20, lines 12-28); however Agazzi does not explicitly teach a speed adjuster that masks an advertised speed.

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Trans teaches a physical layer of a first device that is connected to cable of an Ethernet network including a speed adjuster that masks an advertised speed (col. 21, lines 6-41).

It would have been obvious to one of ordinary skill in the Computer Networking art at the time of the invention to combine the teachings of Agazzi regarding a process of checking to see if a pair of wires is inoperable with the teachings of Trans regarding a speed adjuster that masks an advertised speed because it beneficial for system to be capable of scaling bandwidth to existing communications lines (Trans, col. 1, lines 36-53).

29. As to claim 26, Agazzi teaches a physical layer where the speed of a device is not masked when a number is four (col. 19, lines 25-39 and col. 20, lines 12-28).

30. As to claim 27, Trans teaches a system wherein the speed adjuster does not mask an advertised speed of a first device when the requested speed is less than 1 gigabit per second (col. 21, lines 6-41).

31. As to claim 28, Agazzi teaches the physical layer of claim 25, wherein a pair of twisted pair wires are inoperable when at least one of signals are not received on said pair and signals received by said pair cannot be decoded correctly by said DSP (col. 19, lines 25-39 and col. 20, lines 12-28).

32. As to claim 29-32, they feature the same limitations as claims 11-24 and are rejected for the same reasons as claims 11-24.

33. As to claim 33, Trans teaches a status indicator that notifies said first network device when said first speed is being masked (col. 21, lines 6-41).

34. As to claim 3, it is rejected for the same reasoning as claim 25.

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35. As to claim 4, Trans teaches the physical layer of claim 3 wherein said requested speed is 1 Gigabit per second and said first number is two (col. 21, lines 6-41).

36. As to claim 5, Agazzi teaches the physical layer of claim 3 wherein said speed adjuster does not mask said advertised speed of said first device when said first number is greater than or equal to the number of twisted pair wires that are required to support said requested speed (col. 19, lines 25-39 and col. 20, lines 12-28).

37. As to claim 6, Trans teaches the physical layer of claim 3 wherein said speed adjuster does not mask said advertised speed of said first device when said requested speed is less than 1 gigabit per second (col. 21, lines 6-41).

38. As to claim 9, Agazzi teaches a physical layer that increments a first counter when said cable detector determines that said first number is equal to two and autonegotiation fails (col. 19, lines 25-39 and col. 20, lines 12-28).

39. As to claim 10, Agazzi teaches a physical layer of claim 9 wherein said speed adjuster resets and sets said first counter equal to zero when said first counter is equal to a first Limit (col. 19, lines 25-39 and col. 20, lines 12-28).

40. As to claims 60-63, 66-67, 85-88, 110-113, 116-131, 134-137, 140-141, and 156-182, they feature limitations rejected for the same reasons as claims 3-6, 9-10, and 25-33.

Conclusion

41. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

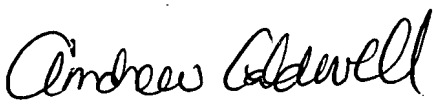
42. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas B. Blair whose telephone number is (571) 272-3893.

The examiner can normally be reached on 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Douglas Blair
DBB


ANDREW CALDWELL
SUPERVISORY PATENT EXAMINER